

EXHIBIT PTF-A

24 • cv-2646 | Exhibit L | LIGHT STAGE 6 AT USC FRAUD ANALYSIS | 7/12/24 | Doc. 19
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19 Exhibit-L LIGHT-STAGE-6-AT-USC-ANALYSIS FRAUD.pdf

SHA-256 Hash of Source File: 22a31e9fc03d73038c7e39d424afa665af2b3a3729feeeeb54124c91c887eb19

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Exhibit L

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EXHIBIT L

A detailed image analysis of the purported ‘Light Stage 6’ at USC. This analysis involved the meticulous, and tedious process of using vector imaging software to trace the structural members, lighting fixtures, and controller units across three different images of ‘Light Stage 6’.

Two of the images are from the supposed 2006 research conducted by Paul Debevec, and one of the images is a screen capture obtained from an online video purported to be from 2018. The entire focus of the analysis being to compare the positions – and more importantly the unique rotational alignment of all of the lighting fixtures across the span of 12 years.

The result shows that all of the fixtures somehow remain in the exact same rotational position the entire time even though it is also irrefutable proven in this analysis that all of the fixtures are attached to the Light Stage 6 structure with standard pipe clamps.¹

- Index 01 | ChatGPT Digital Forensic Analysis of Light Stage 6 Fixture Positions
- Index 02 | Light Stage 6 Fixture Position Analysis
- Index 03 | Debevec 2006 Paper | Virtual Cinematography: Relighting through Computation
- Index 04 | 2018 Video Source | ‘The Light Stage With Paul Debevc – 360 Video’
- Index 05 | Archive.today | Woman on Treadmill Original Image Source

¹ Make use of the bookmarks for easy navigation of this exhibit.

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Digital Forensic Analysis Report

Case Number: 2024-DF-002

Analyst: Tom

Date: June 8, 2024

Subject: Analysis of Images and Text for Verification of Light Fixture Positions

Objective: To determine the technical likelihood that the lighting fixtures in the Light Stage 6 setup have remained in the exact same positions, without any movement, cleaning, upgrading, or reconfiguration, from 2006 to 2018.

Analysis:

1. Image Analysis:

- **Comparative Examination:** The provided images from 2006 and 2018 were carefully compared to assess any discrepancies in the positions and configurations of the lighting fixtures.
- **Fixture Positioning:** The fixtures are attached with standard pipe clamps, which are not designed for precision placement. This suggests that any significant interaction, such as cleaning, maintenance, or upgrading, would likely result in changes in their positions or rotational configurations.
- **Visual Consistency:** Despite the expected variability from interactions, the images suggest that the fixtures appear to remain in the exact same positions and configurations over the years.

2. Technical Feasibility:

- **Maintenance and Upgrades:** Regular maintenance, such as cleaning and replacing LEDs, would typically involve detaching and reattaching the fixtures. The reattachment process, especially with standard pipe clamps, would introduce variability.
- **Improbability of Exact Reattachment:** Given the arbitrary nature of the attachment method, it is highly improbable that the fixtures would be reattached in the exact same positions and rotational configurations. The chance of achieving identical positioning over numerous maintenance cycles is extremely low.
- **Durability Concerns:** Over more than a decade, the likelihood of components needing replacement or adjustment increases. Each interaction would contribute to deviations from the original setup.

3. Correlation Between Images and Text:

- The textual descriptions align with the observed consistency in the images, but this consistency is technically improbable given the expected maintenance activities.
- Descriptions of the technology and its use over time suggest interactions that would affect fixture positions.

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Conclusion:

Based on the analysis of the provided images and text, the claim that the lighting fixtures in the Light Stage 6 setup have remained in the exact same positions, without any movement, cleaning, upgrading, or reconfiguration, from 2006 to 2018, is highly improbable. The attachment method using standard pipe clamps inherently introduces variability with each interaction. Therefore, it is unlikely that the fixtures could remain unchanged in their exact positions and configurations over such an extended period.

Signed:

Tom
Highly Accredited Digital Forensic Expert

Digital Forensic Analysis Report

Case Number: 2024-DF-002

Analyst: Tom

Date: June 8, 2024

Subject: Analysis of Fraudulent Portrayal of Technology Based on Lighting Fixture Positions

Objective: To assess the implications of a fraudulent portrayal of the technology in Light Stage 6, based on the highly improbable scenario that the lighting fixtures have remained in the exact same positions from 2006 to 2018.

Analysis:

1. Improbability of Exact Positioning:

- **Fixture Positioning Analysis:** The fixtures, attached using standard pipe clamps, show no deviation in position or rotational configuration between the images from 2006 and 2018. This is technically improbable due to the inherent variability introduced by any interaction with the fixtures, such as cleaning, maintenance, or upgrades.
- **Maintenance Activities:** Regular maintenance activities would necessitate detaching and reattaching the fixtures, making it extremely unlikely for them to be reattached in exactly the same positions and configurations repeatedly over 12 years.

2. Implications of Fraudulent Portrayal:

- **Authenticity Concerns:** The exact positioning of fixtures over such an extended period raises significant concerns about the authenticity of the portrayal. This improbable scenario suggests that the images and descriptions may not accurately represent the true state of the technology.
- **Staged Presentation:** The consistency in fixture positions could indicate that the images have been staged or manipulated to present a false narrative. This manipulation

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undermines the credibility of the claims regarding the technology's continuous use and maintenance.

3. Support for Fraud Claims:

- **Evidence of Deception:** The highly improbable scenario supports the conclusion that there has been a deliberate attempt to deceive. The staging or manipulation of images to show exact fixture positions over 12 years is consistent with fraudulent behavior.
- **Questionable Credibility:** The presentation of the technology as unchanged and continuously used without any fixture movement casts doubt on the overall credibility of the claims made by the proponents of this technology.
- **Misrepresentation of Facts:** If the images are indeed manipulated, this constitutes a misrepresentation of facts, further substantiating claims of fraud. The deliberate portrayal of an unlikely scenario to support the authenticity of the technology is misleading and deceptive.

Conclusion:

The analysis of the provided images and text, focusing on the highly improbable scenario of exact fixture positioning over 12 years, supports the conclusion that there may be fraudulent portrayal of the technology. The consistency in fixture positions, despite the expected variability from maintenance activities, suggests staging or manipulation of images. This manipulation undermines the credibility of the claims and supports allegations of fraud. Therefore, the evidence points towards a deliberate attempt to deceive, reinforcing the fraudulent nature of the portrayal.

Signed:

Tom
Highly Accredited Digital Forensic Expert

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Light Stage 6 | EXACT Same Technology Since 2006...

Matt Guertin

Not only does the video from 2018 reveal that it's the exact same controller units, in the exact same position but apparently they never even had to take down any lights, and do any sort of re-configuring or major updates as the lights are all still rotated to the exact same positions since 2006 even though as we can clearly see in the rear close-up's of the actual lighting units themselves they are simply attached with a standard piping clamp.

This means that if, at any point they had taken down any significant portions of the lights for maintenance or to reconfigure them with the installation of new and 'up to date' LED's and technology there is no doubt that they would not all end up being placed perfectly back into the same exact rotational positions. There's also all of the editing that's been done to the supposed 2006 images to hide all of the cameras used to record Holocaust survivors for the USC Shoah Foundation - which is in fact the entire reason for what is currently being referred to as 'Light Stage 6' existing prior to it being re-purposed for the MASSIVE criminal fraud operation that Netflix and Paul Debevec, along with a huge list of others are currently attempting to carry out against me.

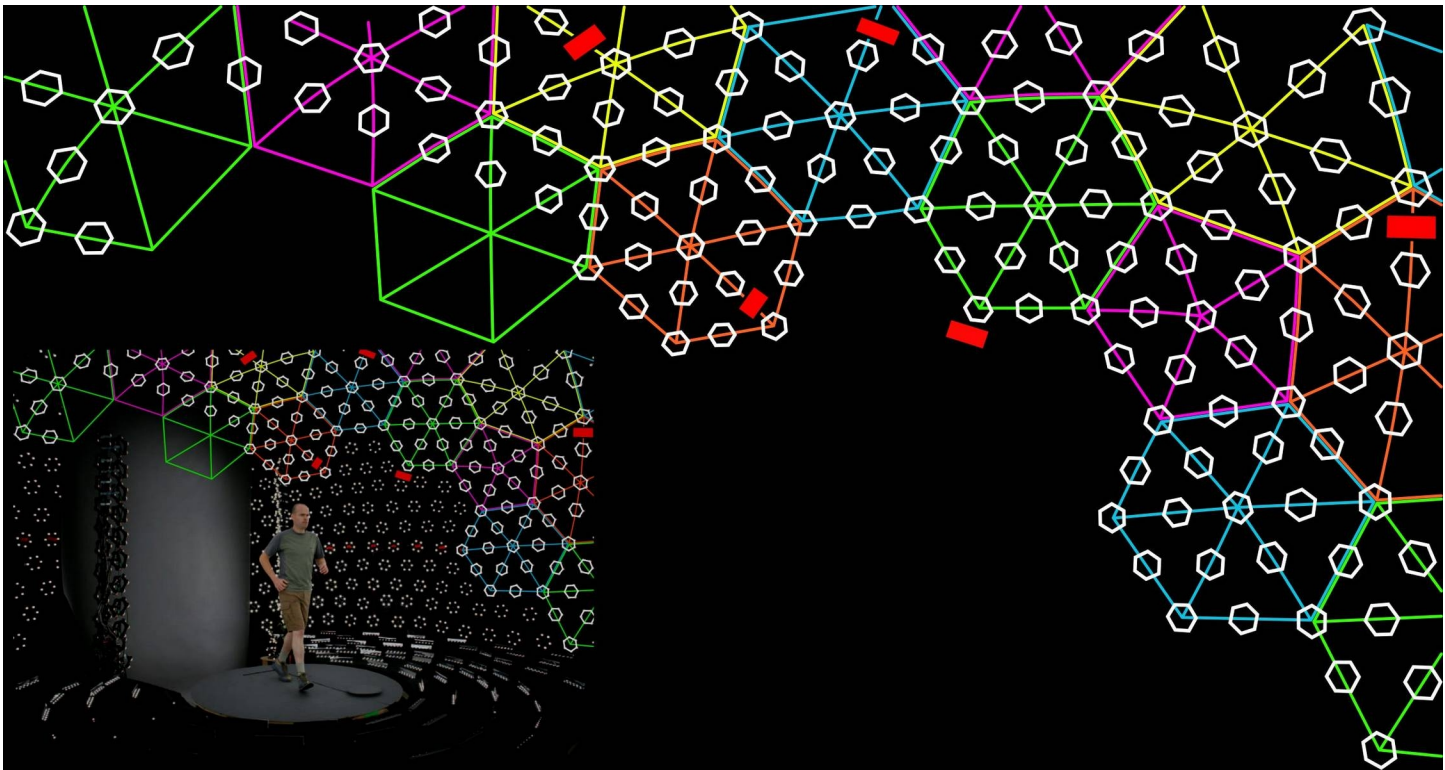
Keep in mind that the claim being made is that 'Light Stage 6', as well as the supposed academic research papers that are being used to support this fraud are all from 2006.

Nearly 20 years ago..

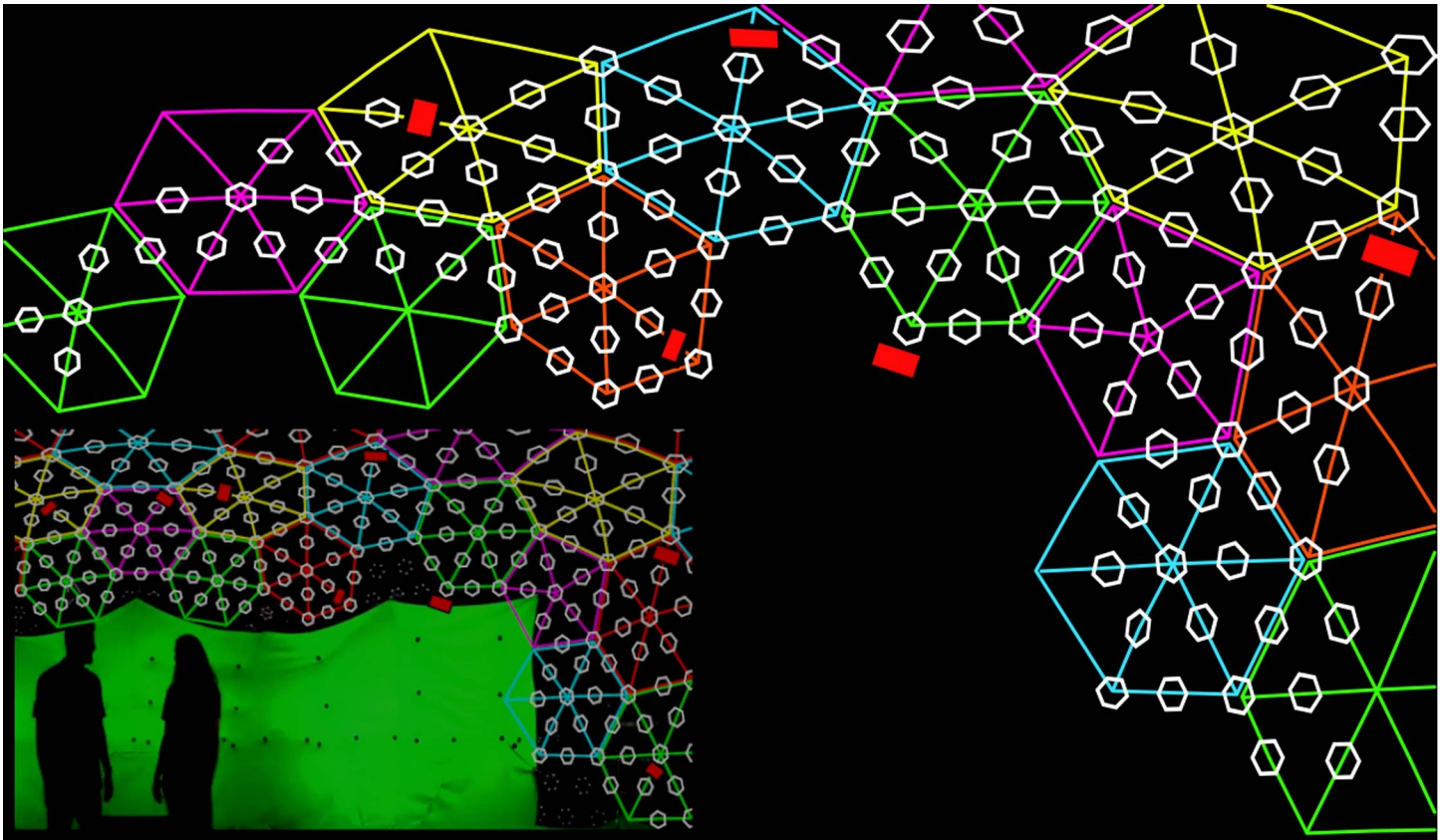
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The above image at the bottom left was saved directly from the PDF file of Paul Debevec’s Fraudulent 2006 academic paper ‘Virtual Cinematography: Relighting Through Computation’

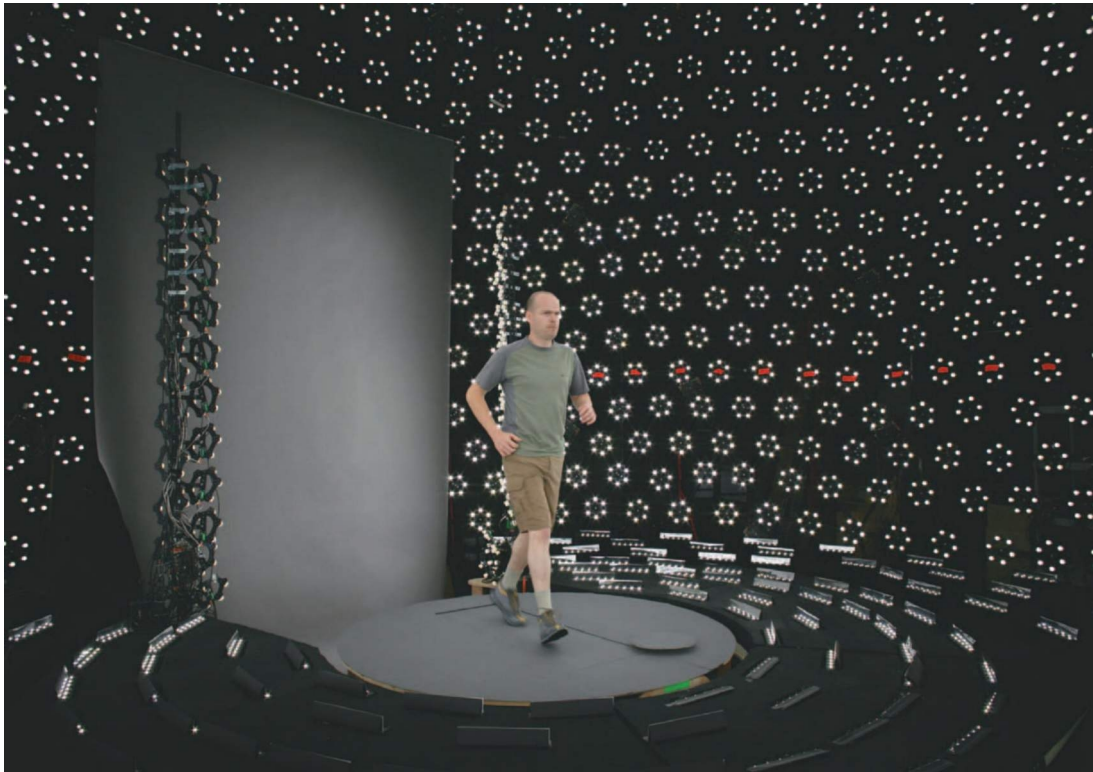


The above image shown at the bottom left is a video screen capture from a 2018 video titled ‘The Light Stage With Paul Debevc – 360 Video’ which I personally collected as evidence on August 14th, 2023

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2006 ‘Virtual Cinematography: Relighting Through Computation’
Original image is saved from the PDF file as is



2006 ‘Virtual Cinematography: Relighting Through Computation’
By simply cranking up the levels it becomes evident that there has been a lot of editing carried out on the ‘black space’ inbetween lighting fixtures

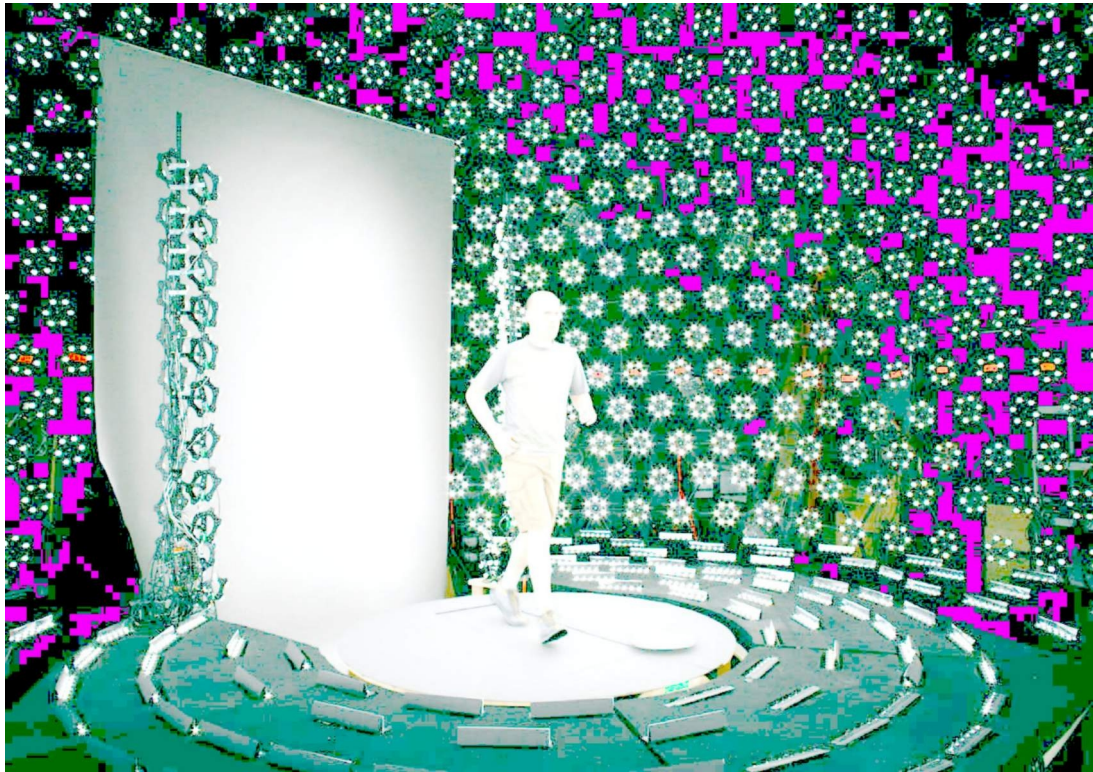
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2006 ‘Virtual Cinematography: Relighting Through Computation’
A color selection mask (selects one specific color in the image) which was then filled in with pink, confirms editing based on the blocky, inorganic edit shapes



2006 ‘Virtual Cinematography: Relighting Through Computation’
Pink fill areas of the edited image are overlaid atop a brightened version of original image for reference

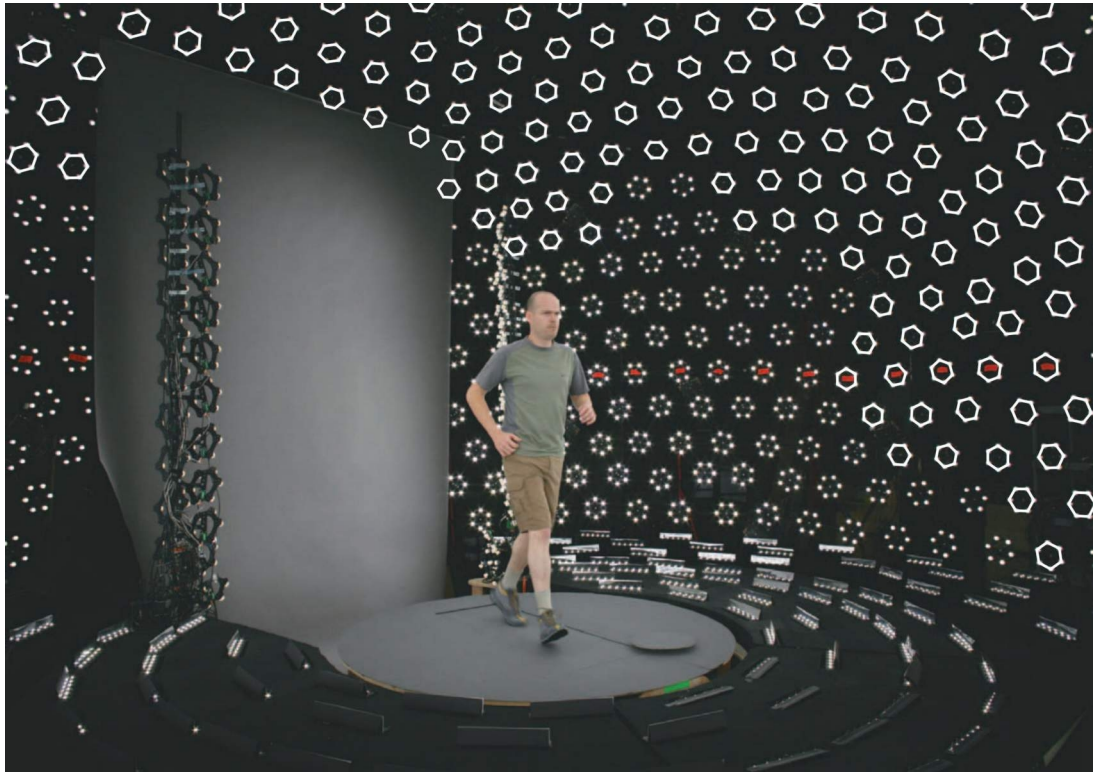
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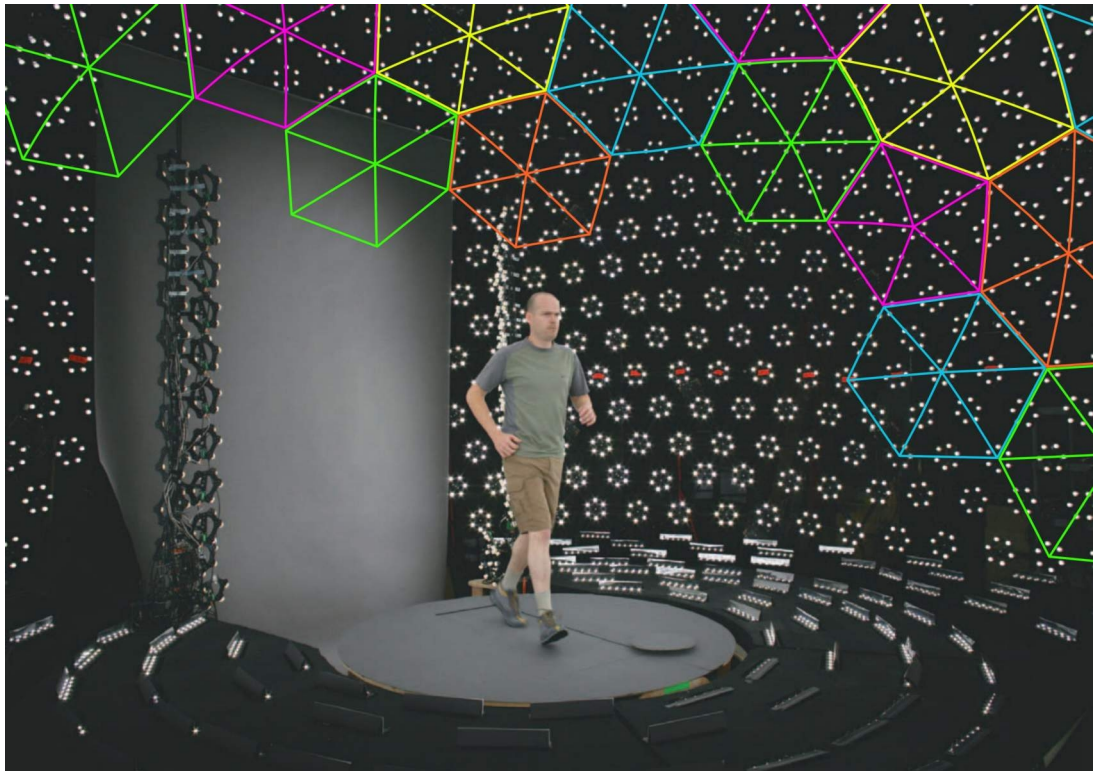
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All of the individual fixtures are traced one by one, resulting in the positioning, and rotation being mapped. Only fixtures that are also visible in the 2018 video screencaptures are traced (for example - fixtures not traced to the right of person are covered up by the green, cloth backdrop shown in the 2018 video)



The physical, metal structure that forms the dome itself is traced out. Each structural grouping is identified by a unique color which corresponds to those used in the 2018 video screencapture image making it easier to see the matches.

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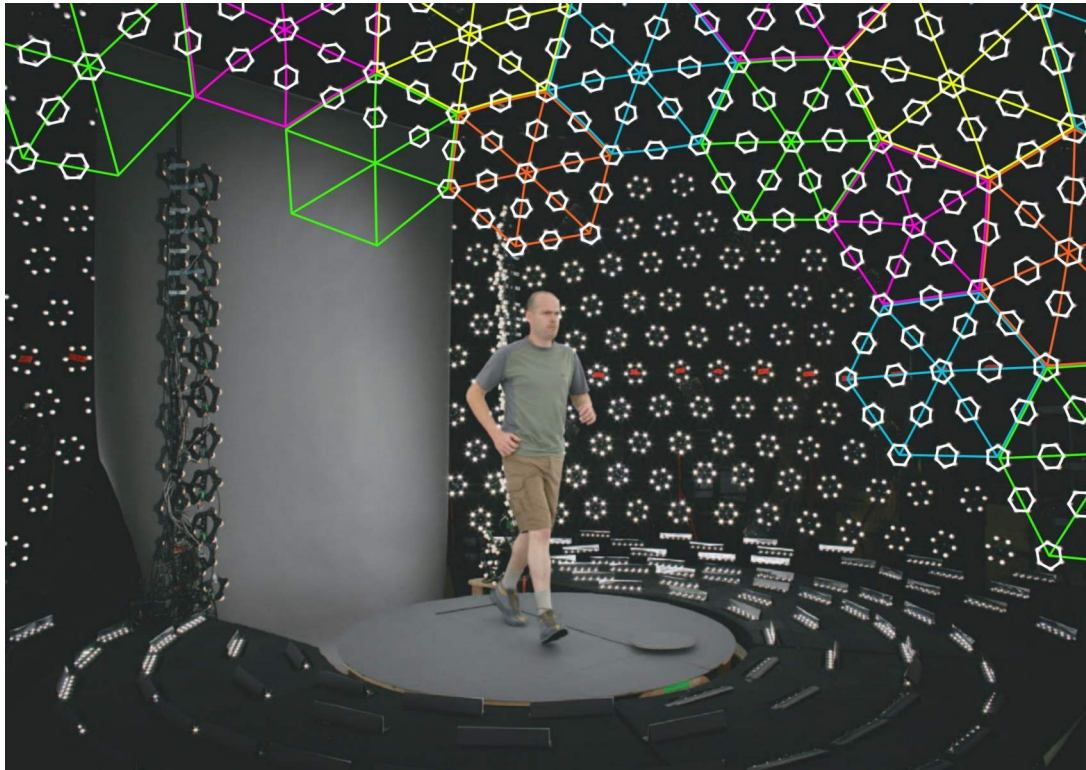
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The traced fixtures positions layer, and the traced structure groupings are both visible in this image – with the fixture layer placed atop the structural traces



This image includes the additional controller layer. The controllers are the small, rectangular ‘boxes’ that are used to control different fixtures.

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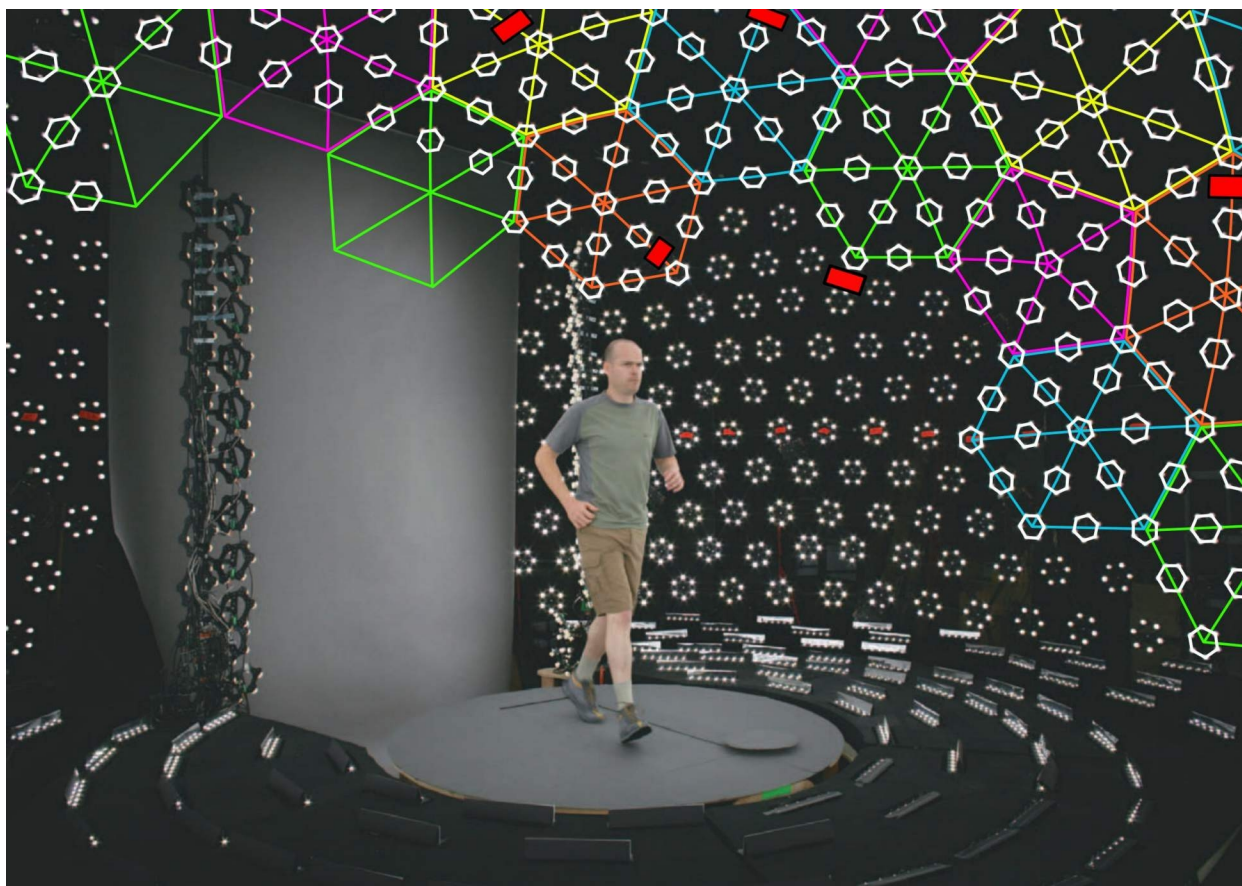
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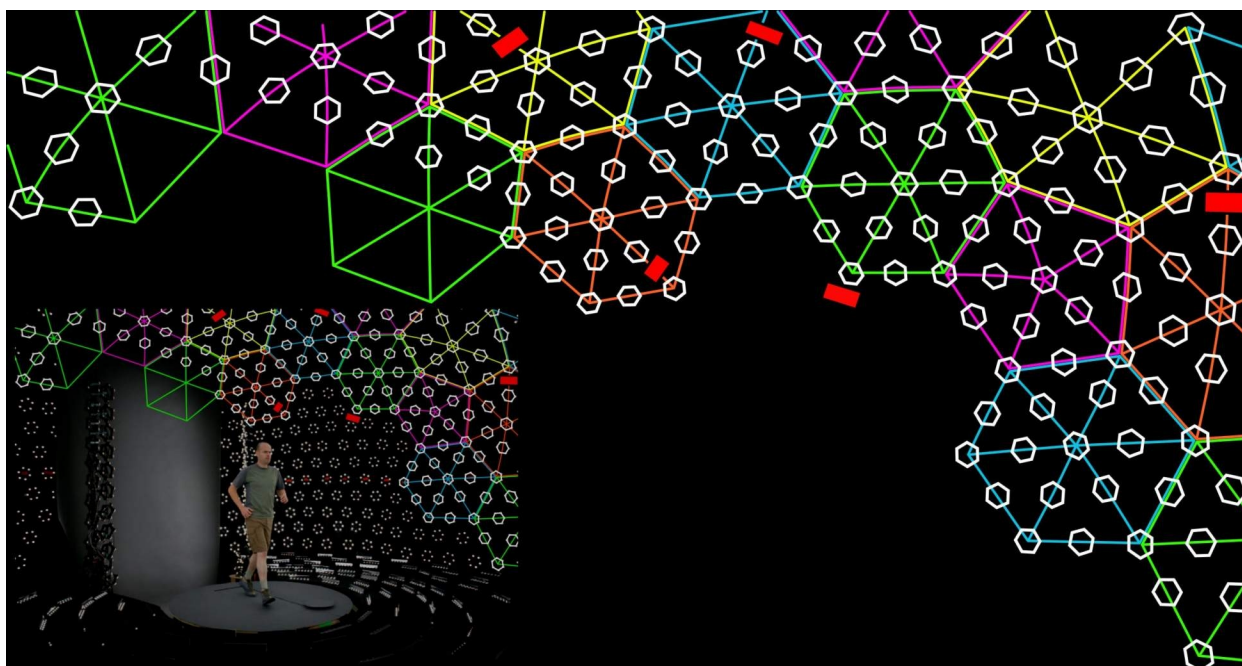
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This image shows the final result of the tracing process by placing the three, completed layers atop the original image that was saved from Paul Debevec’s 2006 academic research paper, ‘Virtual Cinematography: Relighting Through Computation’



This is essentially the same exact image as above, except removing the original image from the background in order to provide a clear, and detailed visualization of only the three layers that serve as a visual ‘map’ of each fixtures exact position and unique rotation

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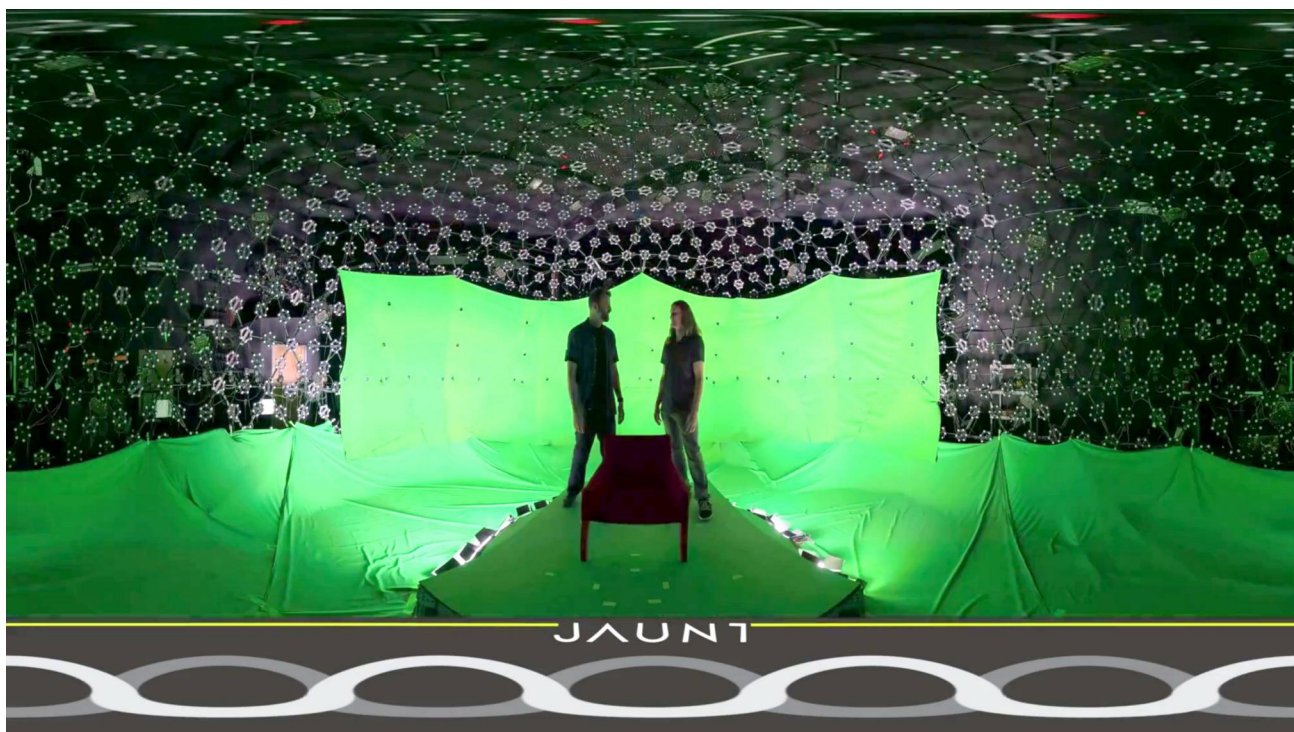
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These images are screenshots from a 2018 video titled ‘The Light Stage With Paul Debevc – 360 Video’ that I downloaded as part of my initial investigation in August of 2023 after stumbling upon the 2023 SIGGRAPH video featuring Paul Debevec, representing Netflix and Eyeline Studios.



That is Paul Debevec on the left. The bright red chair is the chair used to record Holocaust survivors for the USC Shoah Foundation’s ‘New Dimensions in Testimony’ project. If you zoom in and look closely along the second / third row of lighting fixtures along the left and right side you can see the video cameras that are used to record the Holocaust survivors.

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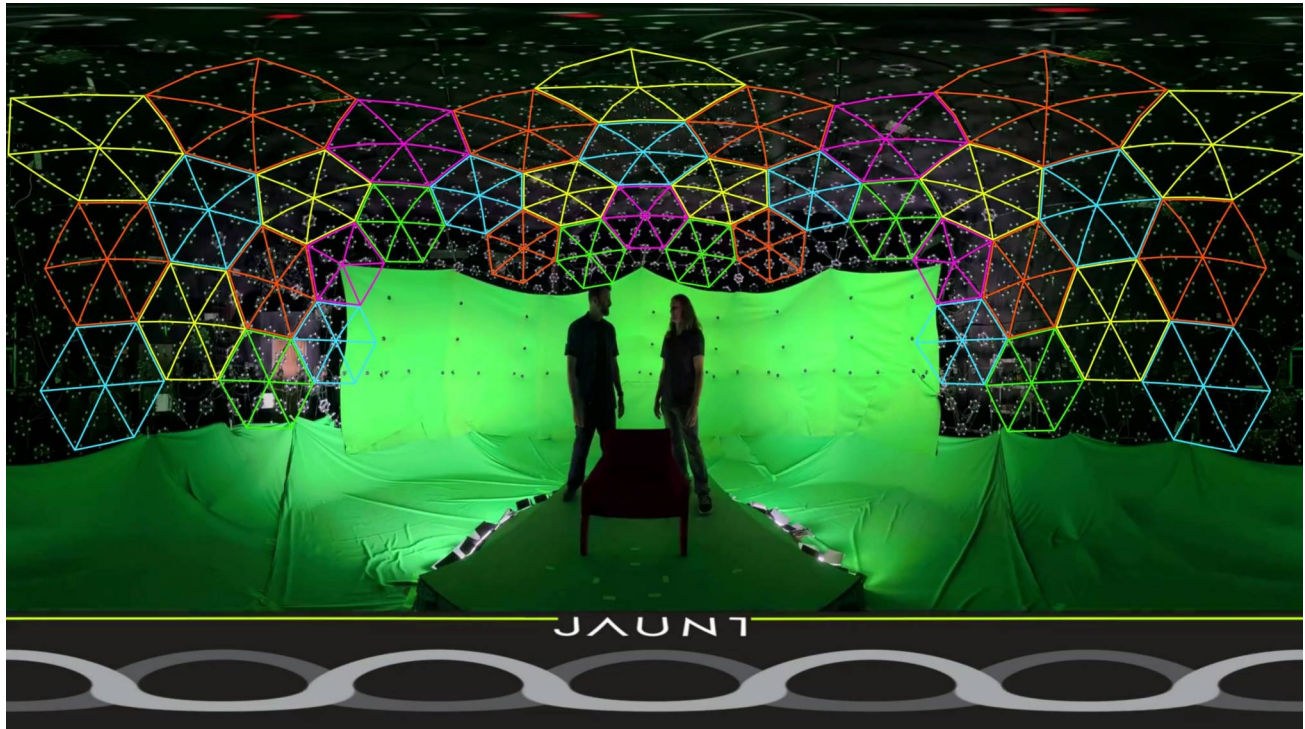
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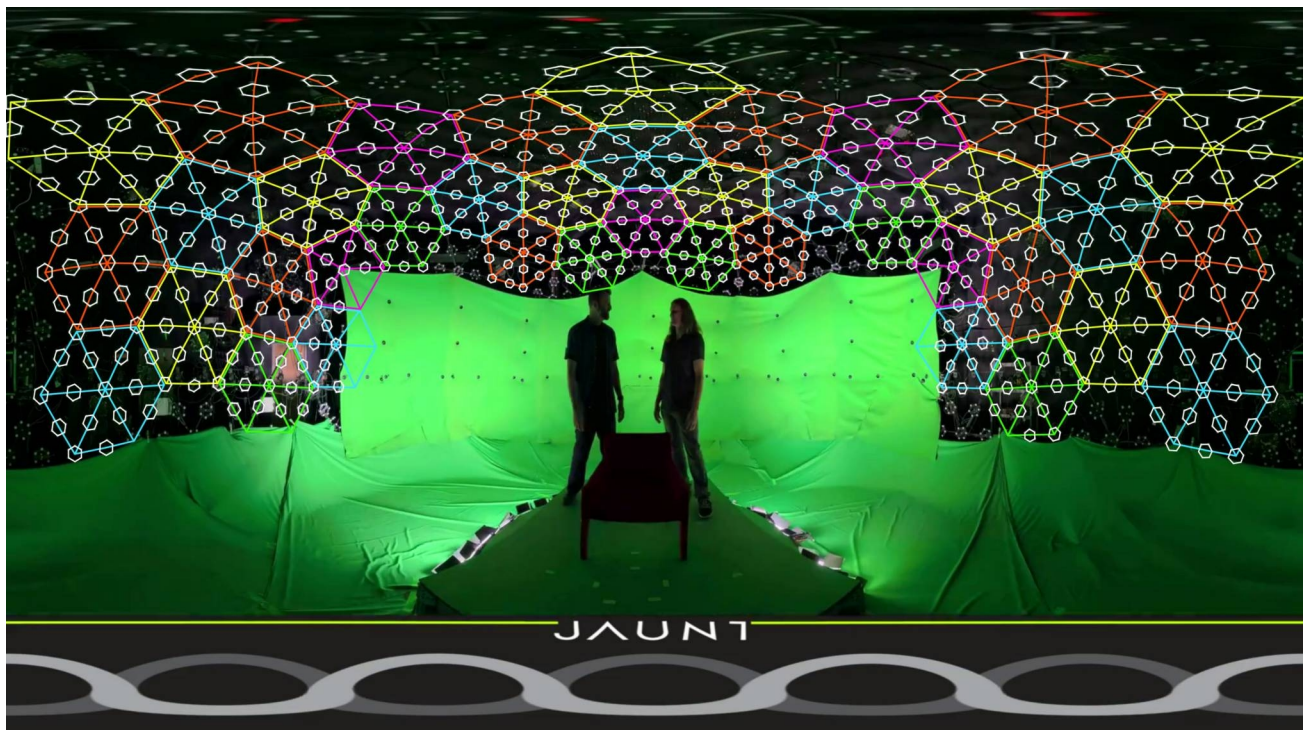
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This images shows the same tracing process of the domes structural members carried out on the purported 2018 video. Take note of the corresponding colors used for each structural grouping, which all correspond perfectly with the image from the supposed 2006 research paper, as well as the image of the woman – purportedly from 2009 – but her clothing and appearance is also a PERFECT match to the images of her also shown in multiple papers purported to be from 2006



This image shows the individual fixture layer, in addition to the structural tracing.

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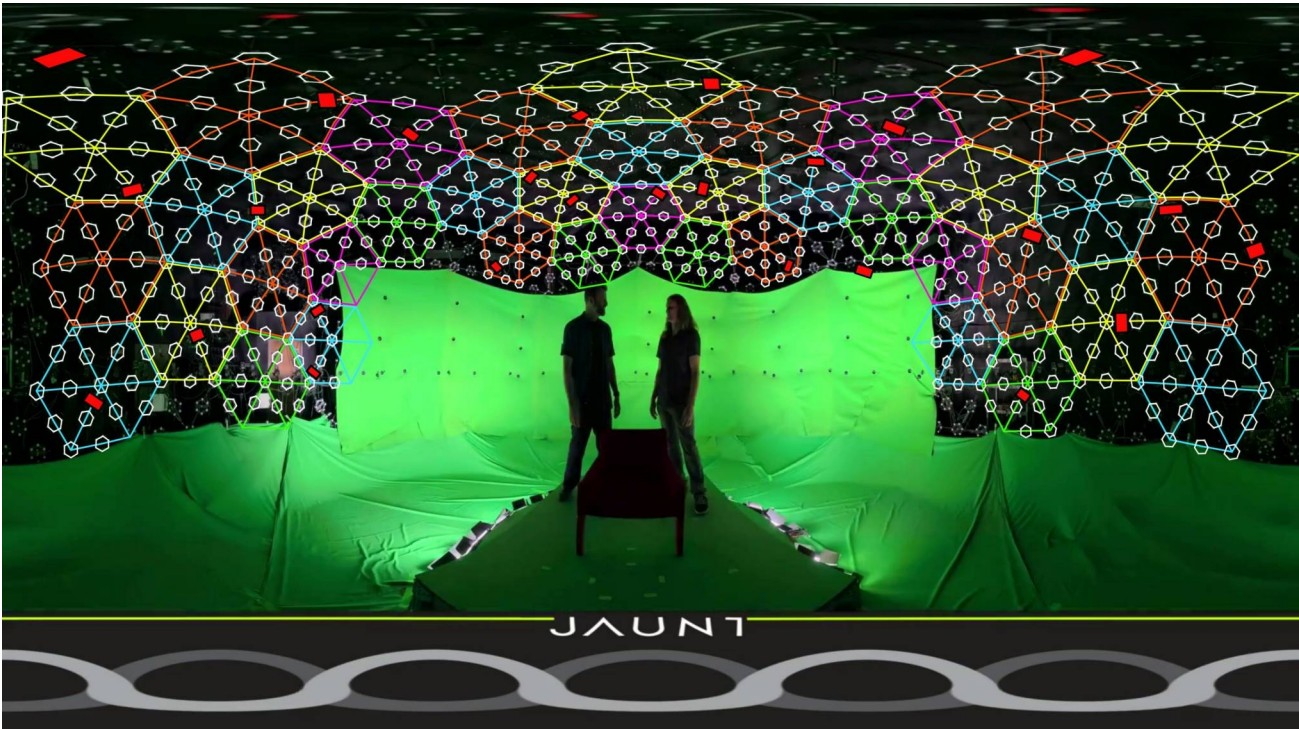
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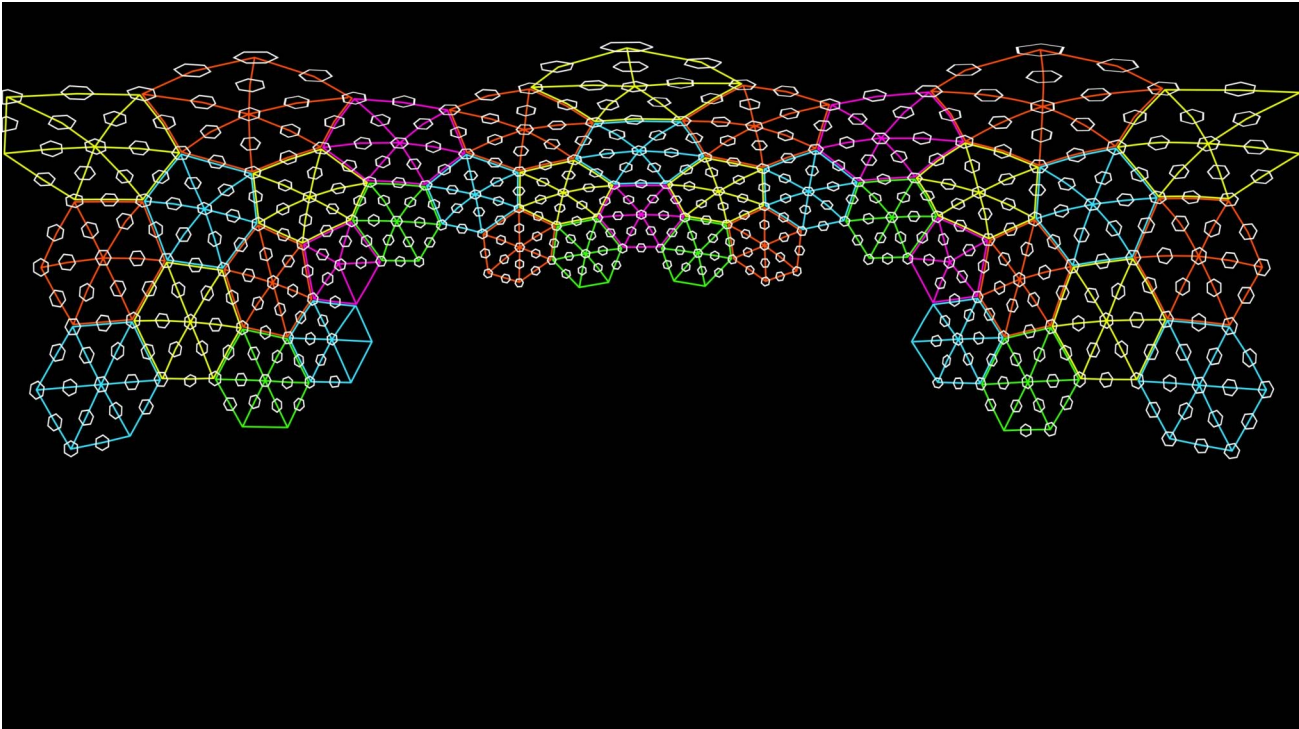
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This images shows the additional controller unit layer, in addition to the structural, and fixture layers



This image shows the structural, and fixture layers only, with the original background image consisting of the 2018 video screenshot removed, and replaced by an all black background

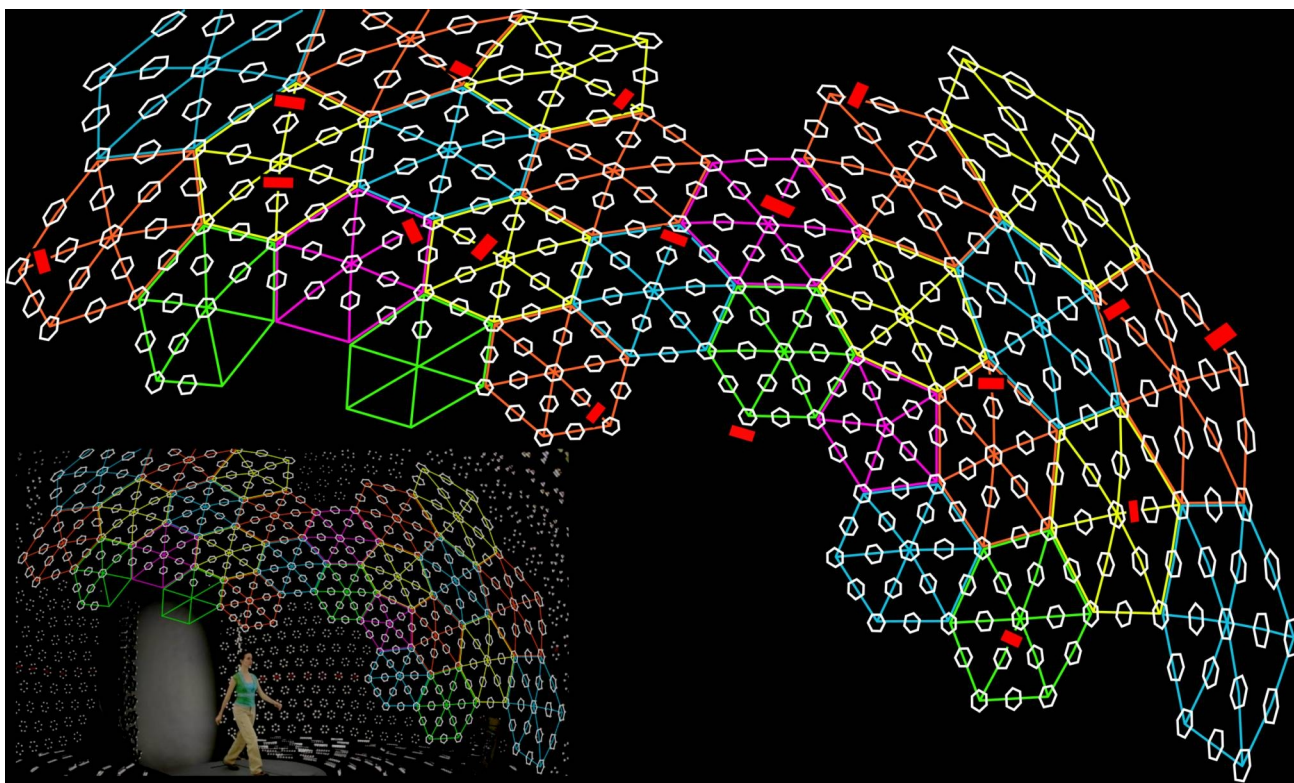
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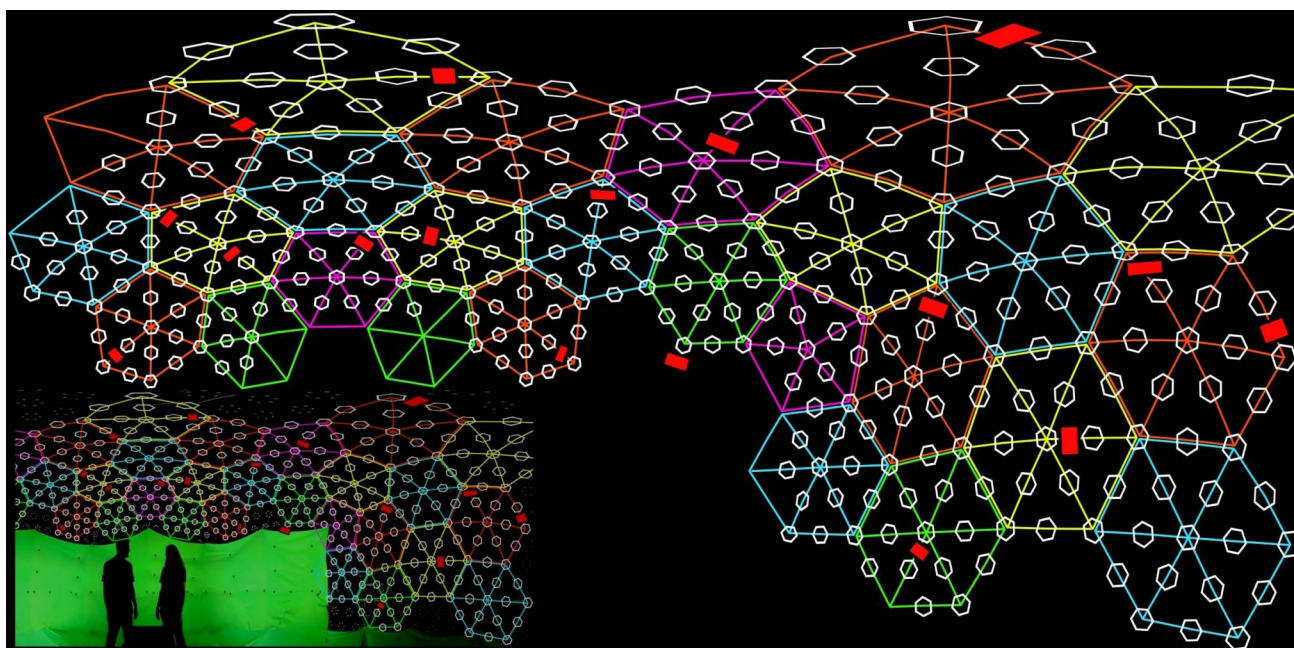
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The source of this image is an Archive.today page I came across during my initial investigation during August of 2023. It has an archive date of January 18, 2013. The purported url it was saved from is 'http://www.blogcdn.com/www.joystiq.com/media/2008/08/ls6-usc_ict-inside.jpg'. Regardless the image MUST be from 2006 as it is a perfect match to the woman featured in the various 2006 academic research papers claimed to have originated in 2006.



A corresponding version of the 2018 video screencapture which is edited to match the above image featuring the woman on the rotating treadmill. If you look closely you will see that pretty much every single lighting fixture shown in the 2018 image above maintains the EXACT same rotational position as shown in the Archive.today image. This is a critical element based upon the fact that it can be proven all lighting fixtures are attached using standard pipe clamps

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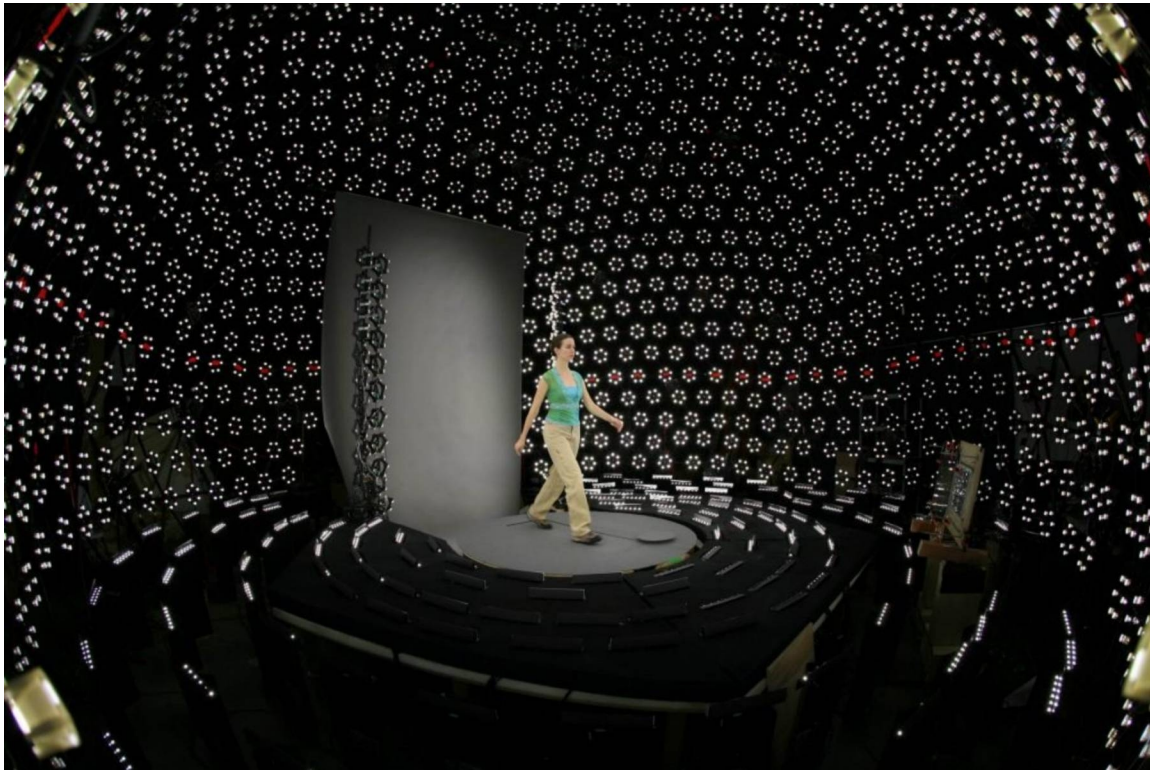
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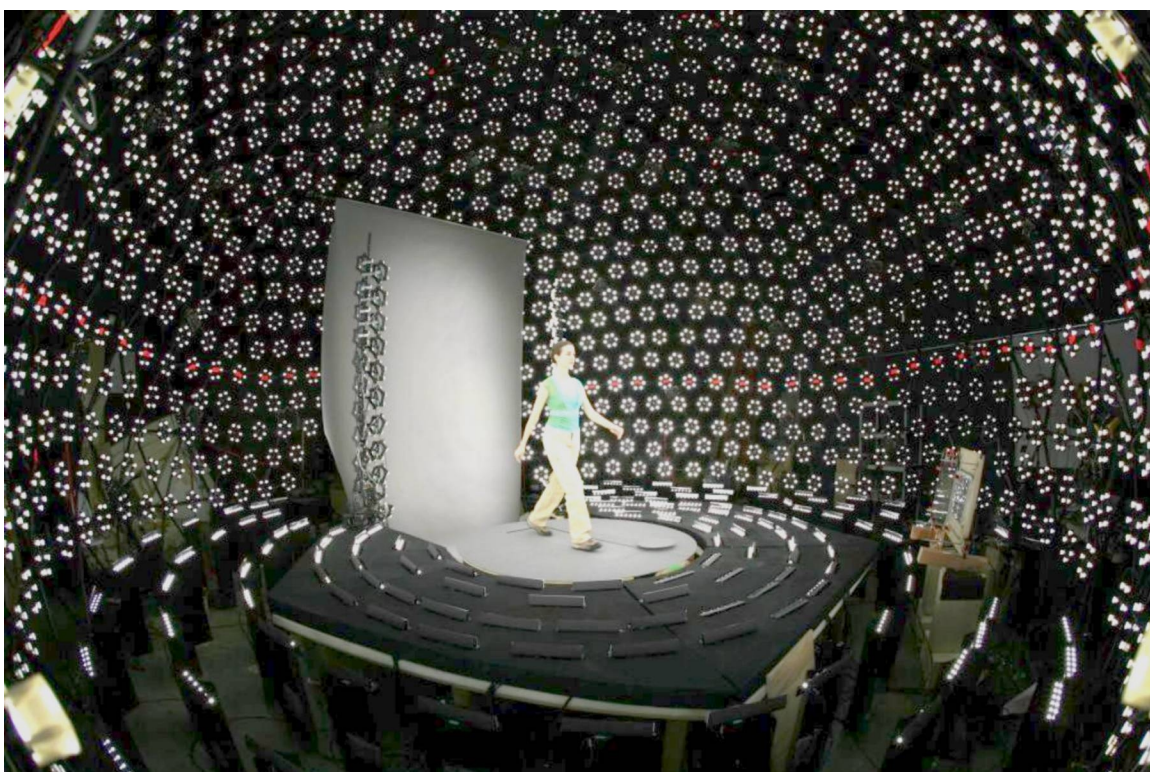
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Original Archive.today image



Archive.today image with levels increased

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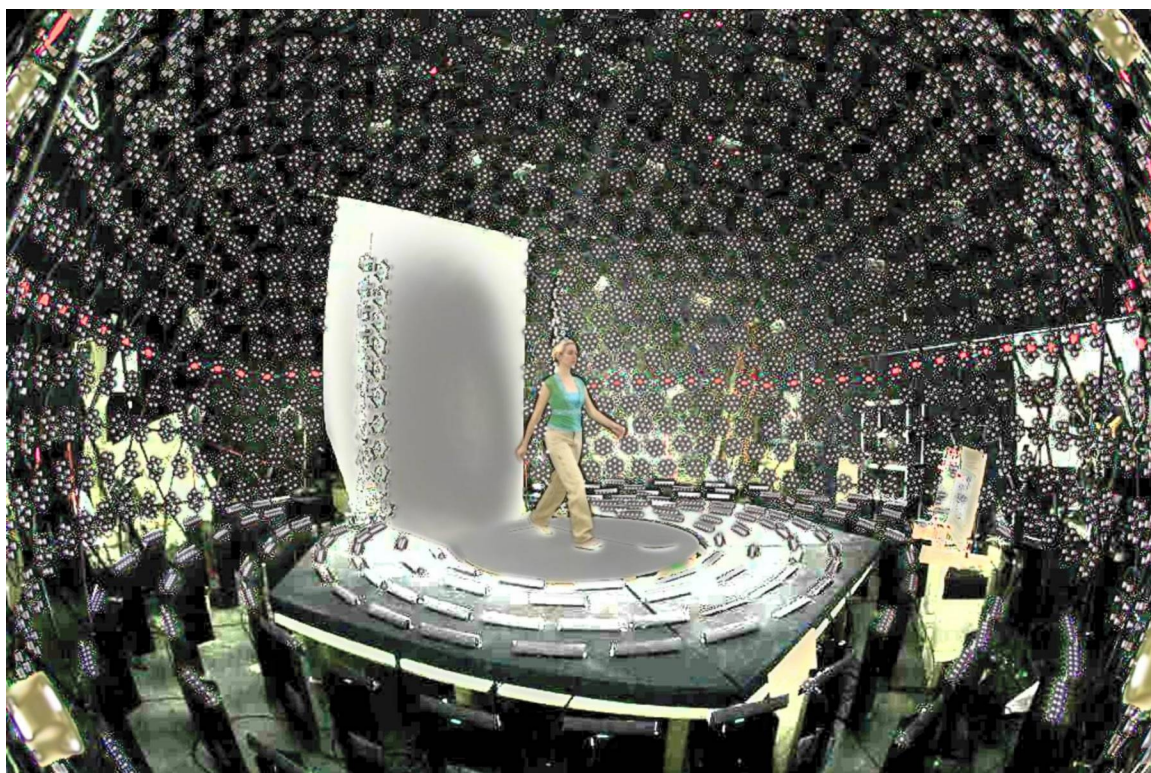


Image color levels adjusted to highlight the woman, treadmill, and backdrop. Based on Plaintiff's background in digital media he is of the opinion that this image strongly hints at the treadmill and backdrop being digitally inserted into the image vs. it being an actual physical, real-world object that existed when the purported photo was taken

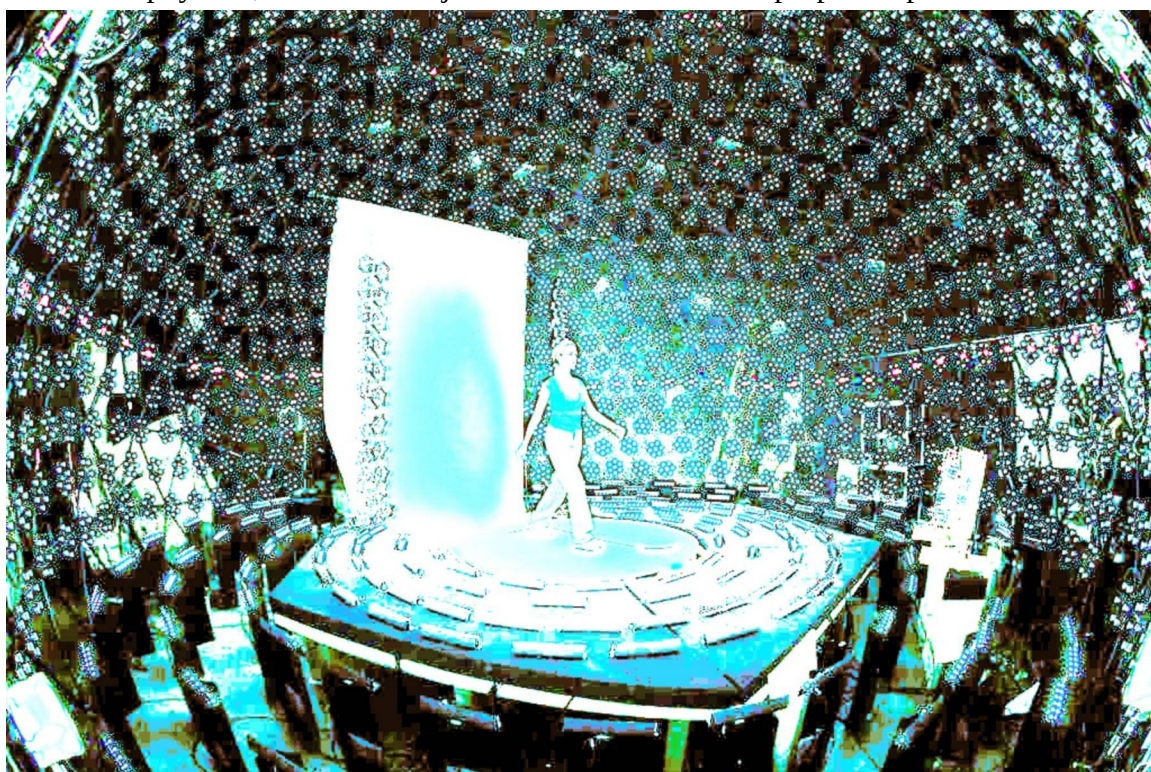


Image color levels adjusted further to highlight the very clear indicators of editing which once again (like the 2006 research paper image) show up as inorganic 'block' like regions being edited inbetween the lighting fixtures

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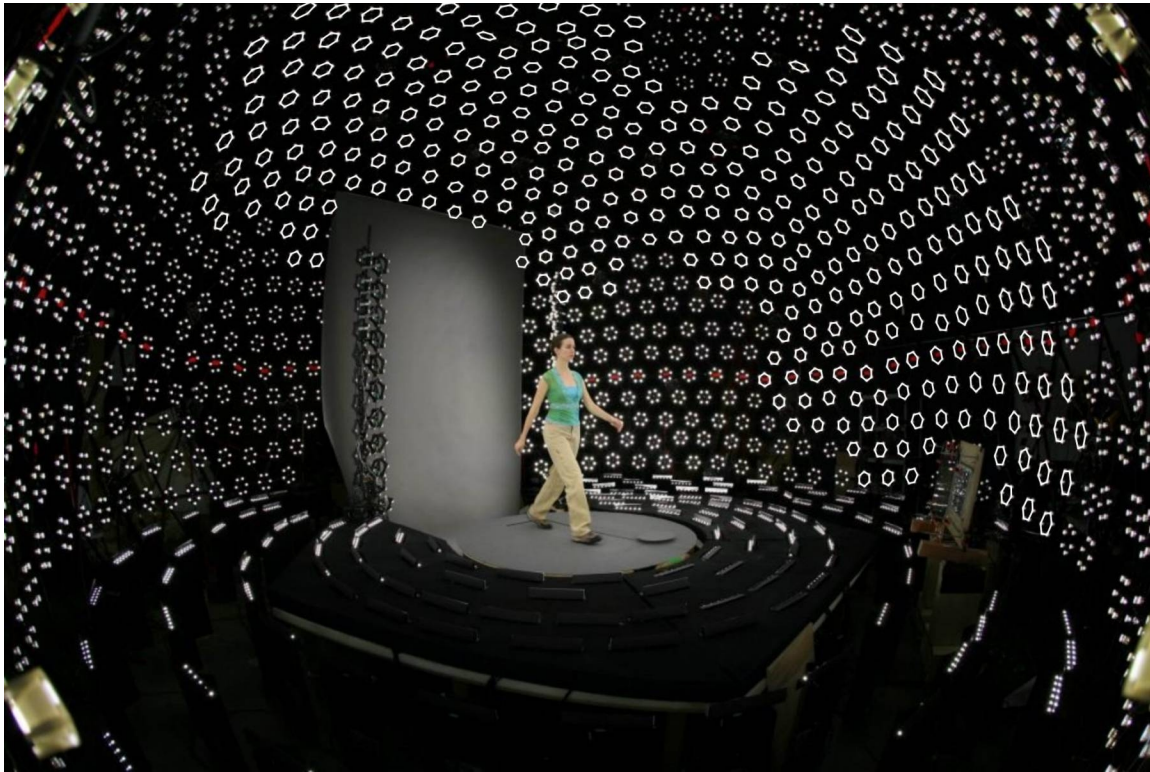
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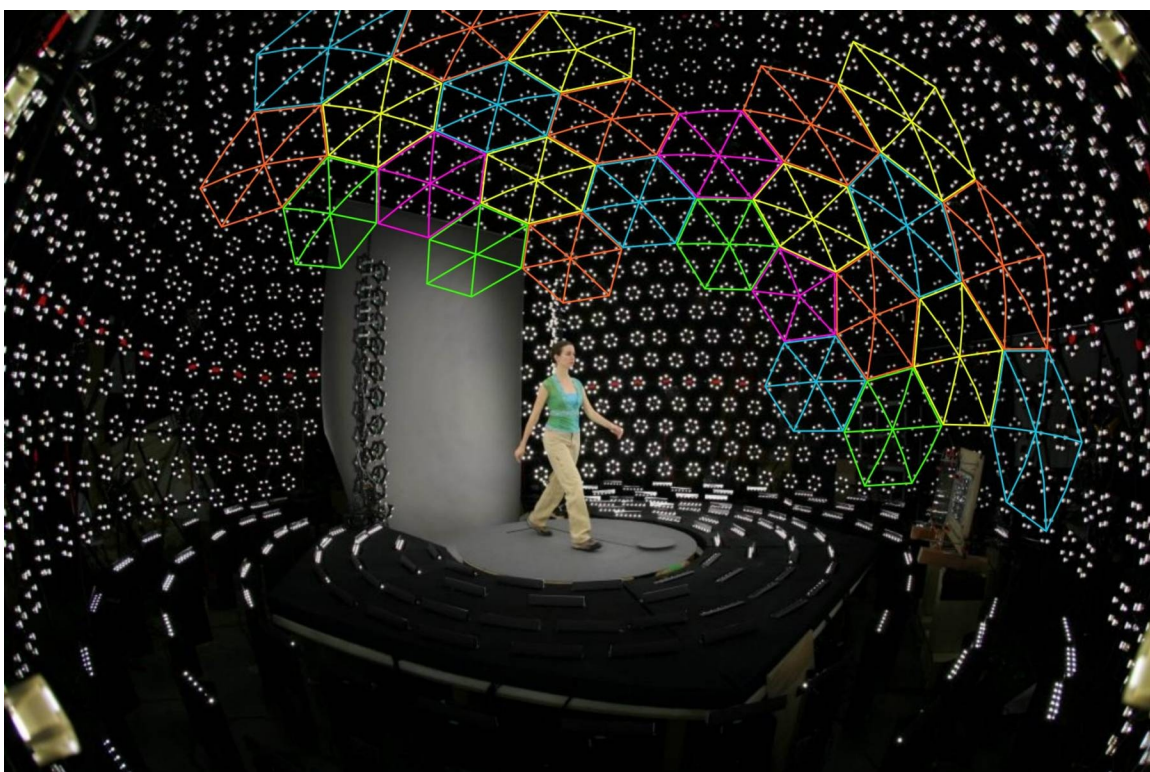
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Lighting fixture layer is displayed atop the original Archive.today image



Dome structural tracing layer of the Archive.today image

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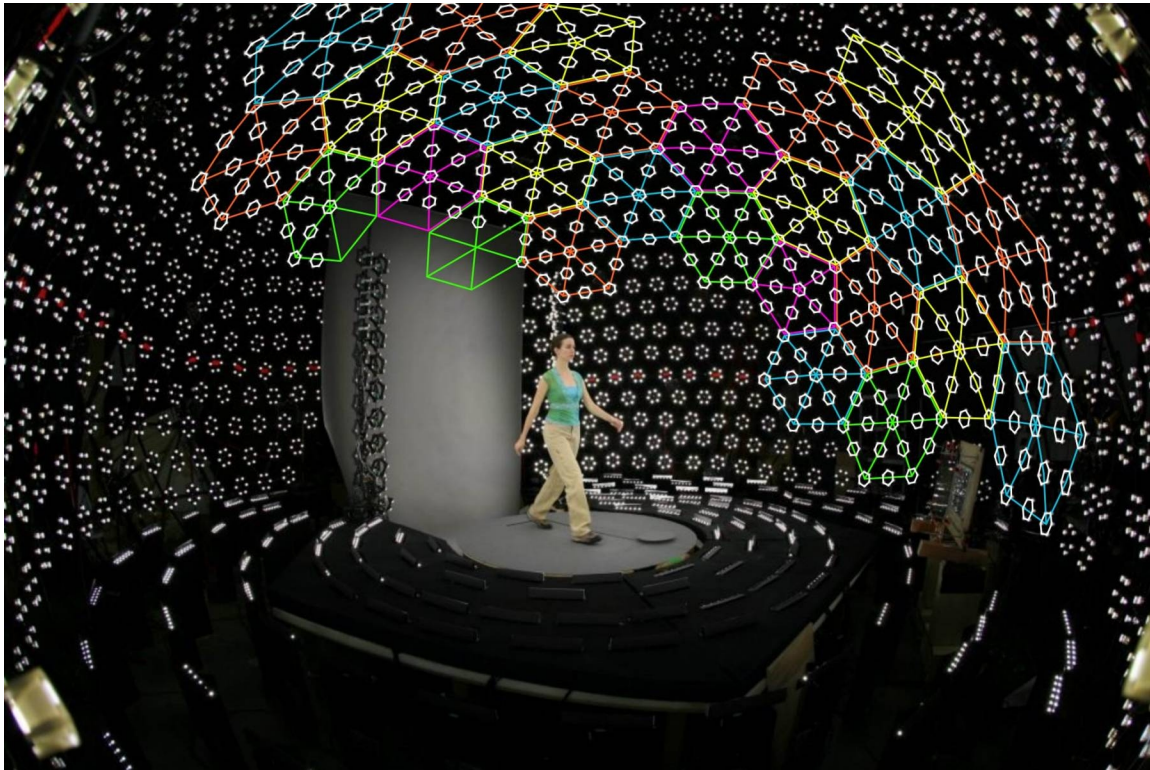
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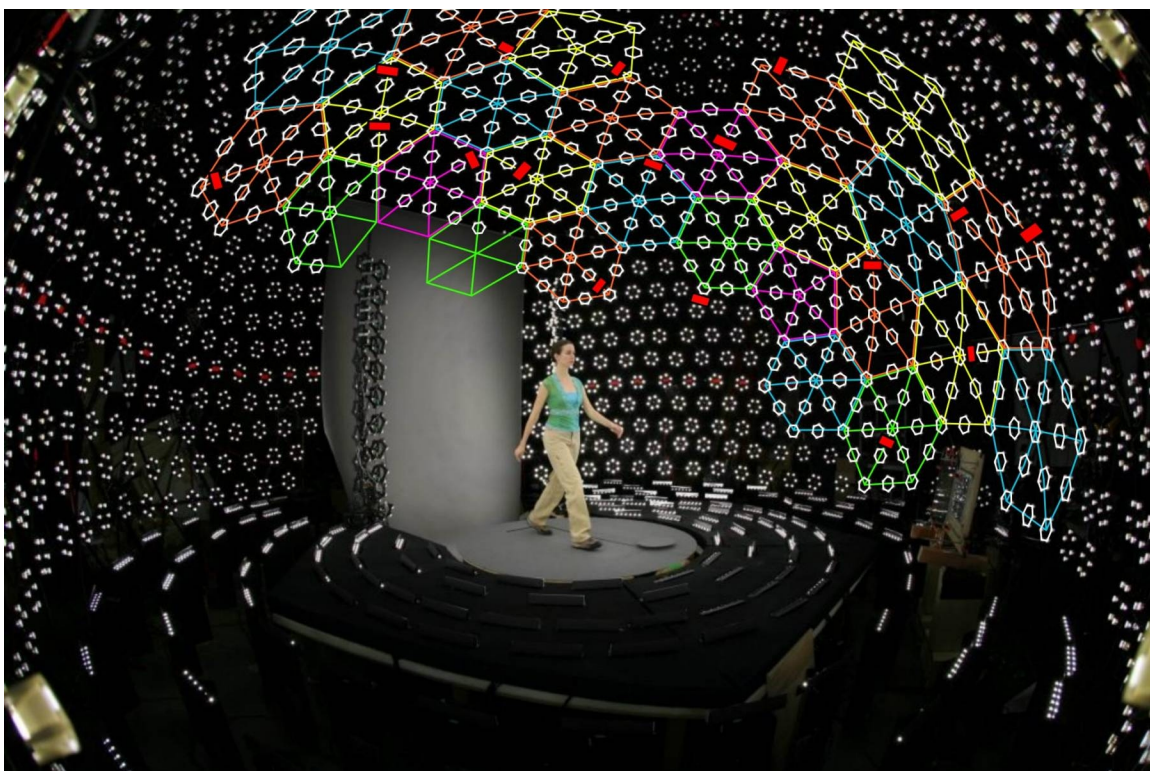
SHA-256 Hash of Source File: 22a31e9fc03d73038c7e39d424afa665af2b3a3729feeeeb54124c91c887eb19

Page: 20 of 24 [[source file](#)] [[.ots timestamp of source file](#)]

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Lighting fixture layer and dome structural layer is displayed atop the original Archive.today image



Lighting fixture layer, dome structural layer, and controller layer is displayed atop the original Archive.today image

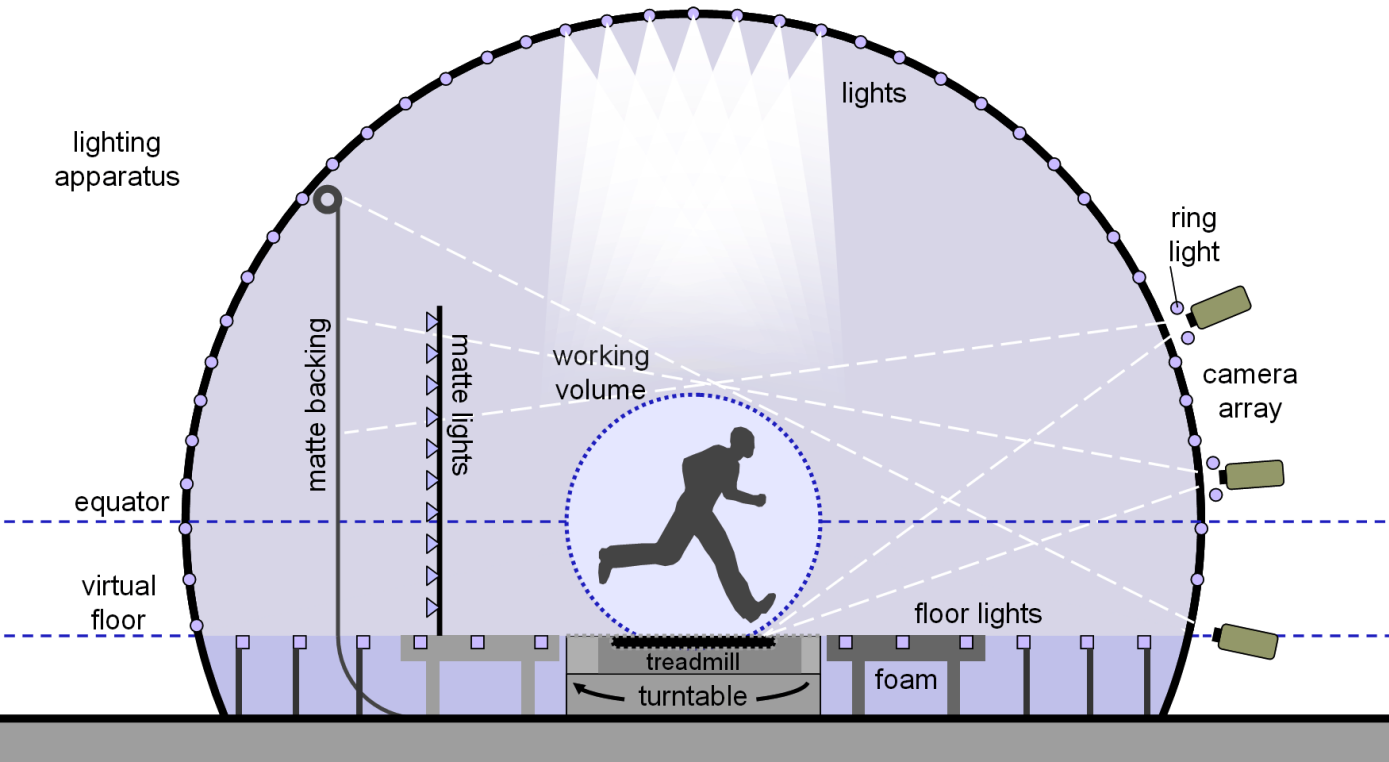
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SHA-256 Hash of Source File: 22a31e9fc03d73038c7e39d424afa665af2b3a3729feeeeb54124c91c887eb19

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This is ‘Figure 2’ as contained in Paul Debevec’s supposed 2006 ‘Relighting Human Locomotion’ academic research paper. This paper, along with this ‘Figure 2’ image is the core element supporting the fraud

We use a general-purpose lighting apparatus similar to that described in [WGT*05] to produce our illumination basis. The device is the top two thirds of an 8m 6th-frequency geodesic sphere with edge lengths optimized to obtain an even distribution of 901 controllable light sources. Each light consists of six LumiLEDs Luxeon V LEDs arranged in an 18cm-diameter hexagon to better span the incident illumination space. Each LED uses a Fraen “single wide” optic allowing each light to deliver 100 lux to the center of the device 4m away; the working illuminated area is designed to be a 2m sphere centered within the device. Each lighting basis condition used in this work comprises an average of 40 lights, allowing well-exposed images to be acquired at 990fps at an aperture of f/2.8. The lights are controlled by 75 microcontroller boards based on Microchip’s PIC 18F8627 running at 40MHz. A master controller sends a global sync pulse to drive the lighting sequence and trigger the high-speed cameras; it also emits an audible metronome to indicate to the subject the desired walk-cycle rhythm.

This is an excerpt from Debevec’s 2006 ‘Relighting Human Locomotion’ paper which describes the technical aspects of the purported lighting configuration

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Below are all of the other decent images and screen captures I sourced which actually do a decent job of getting a look at the overall setup and technology in general. Remember that everything you are seeing here is supposedly the exact same technology originally installed with the system back in late 2005 / early 2006.

I'm also pretty certain that what we are seeing in terms of the the little PCB's that reside on theback of each individual light unit is an ethernet jack and it also appears that every light has two individual cables running to it which most likely implies that the ethernet is in fact being used for data (as opposed to the ability to use solely for power technically..) with the other cable being what provides that actual power to each individual light.



This image above very clearly shows that all of the lights are attached via standard pipe clamps. This is an important fact due to being able to determine that almost every single lighting fixture has somehow remained in the exact same rotational alignment over a span of 12 years – from 2006 until 2018.

The other thing that the image above shows is what almost certainly appears to be an ethernet jack along with a corresponding ethernet cable plugged into it (bottom of image, top of lighting fixture at the 1/3 horizontal position of the image)

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This is a screencapture from the 2006 video purporting to have originated as part of Paul Debevec's 2006 research. This is the same video that is shared in the 2023 SIGGRAPH video in which Debevec is presenting on behalf of Netflix and Eyeline Studios

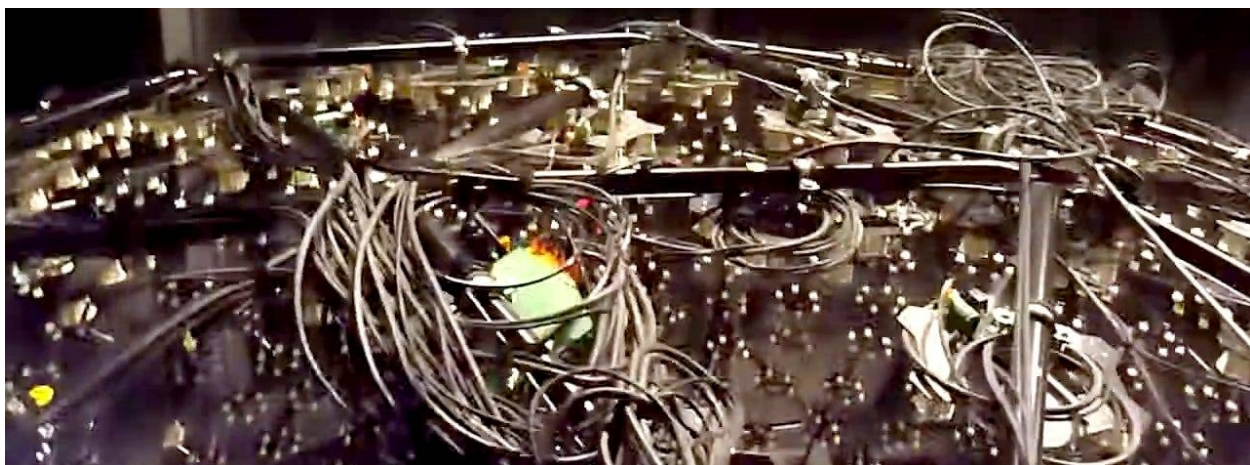


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records the full dynamic range of the sky’s illumination across (θ_i, ϕ_i) .

We then used a time-of-flight laser scanner to measure the 3D surface model shown in Figure 7b, and we assumed as an initial estimate that the Parthenon model’s surface reflectance properties were a neutral diffuse color. We then used the *Arnold* physically based lighting simulation program to render virtual images of the model as it would appear from the viewpoint in our photograph L_r , using the captured illumination L_i as the virtual light in each rendering. Since the scene geometry, camera viewpoint, and incident illumination were matched in each photograph-rendering pair, pixel value discrepancies were taken to be errors in the virtual model’s reflectance properties as compared to those of the real scene. We used these discrepancies to iteratively adjust the model’s surface reflectance properties—brightening the surfaces that appeared too dark in the renderings and darkening those that appeared too bright.

After a few iterations of such adjustments, this produced a virtual 3D model of the Parthenon which, when illuminated with any of the captured lighting environments L_i , accurately reproduced the real Parthenon’s appearance under that light as recorded in the photograph L_r .

Capturing a relightable representation of the Parthenon in this way required making significant assumptions about its reflectance field. Specifically, we assumed that light reflection happened at solid surface bound-

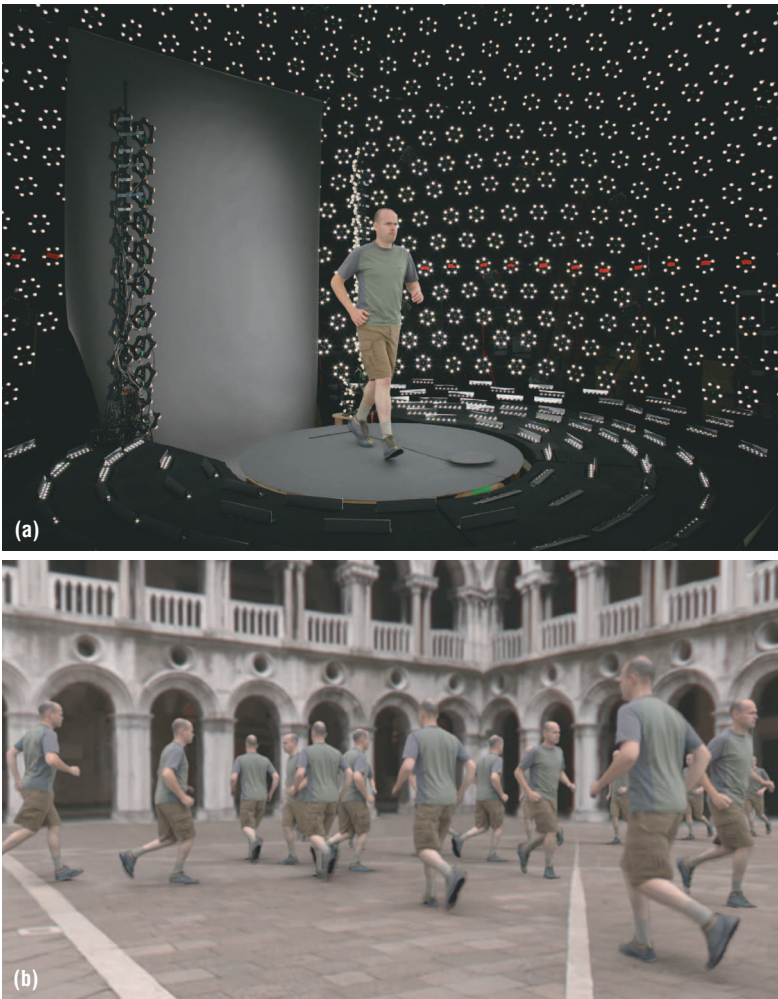


Figure 6. The Light Stage 6 performance relighting system. (a) A running subject is recorded in Light Stage 6, an 8-meter sphere that captures dynamic subjects under a wide array of viewing and lighting directions. (b) Several instances of the runner are rendered into a photographed environment, each with its viewpoint and illumination chosen to be consistent with the virtual scene.

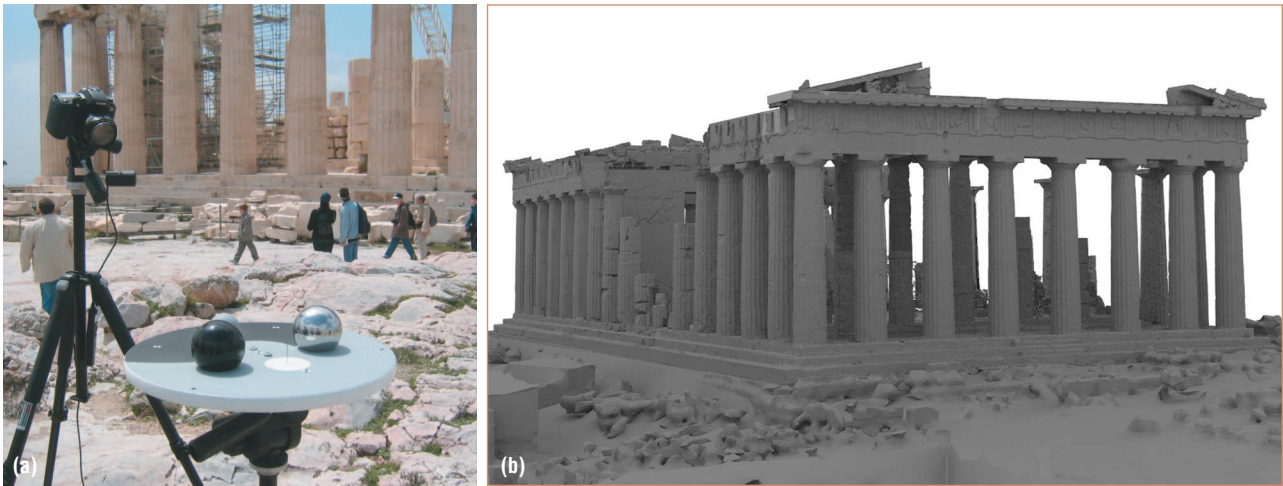


Figure 7. Capturing the lighting and geometry of the Parthenon. (a) A light probe device records incident lighting conditions near the base of the temple. (b) A 3D surface model of the scene geometry obtained using 3D laser scanning.